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**Subject:** effects analysis white paper  
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**Attachments:** [effects analysis brief DRAFT 2012 07 11.docx](#)

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All - updated version reflecting an edit by Carl attached. I adapted Carl's edit slightly and have flagged it in yellow. I believe this paper represents the joint point of view of FWS, NMFS, and DFG, and have shared it up my chain. Any corrections appreciated. Otherwise - Laura, I suggest you share this with ICF at your discretion. I appreciate you will want to talk about this. Let us know how you'd like to proceed. Mike

DRAFT - EFFECTS ANALYSIS AND RED FLAG RESOLUTION ISSUES FOR DISCUSSION

As the “red flag” documents imply, only a subset of the range of operations currently under discussion is likely to meet permit issuance criteria based on current best available science. While it has been agreed that a “decision tree process” will be used to develop new scientific information in key areas to support the best informed choice of initial operations at the time an alternative conveyance becomes available, the permit must specify a set of initial dual-conveyance operations that, in concert with rest of the Plan, contribute to the recovery of listed species.

It has been agreed that the BDCP effects analysis will explore a range of scientific views regarding Plan effects. However, the final permit issuance decision must be based on scientific and commercial information that the fish agencies have determined to be the best available.

To resolve many of the “red flag” issues and support a permit issuance decision, the effects analysis should contain, in addition to whatever other analyses are included, a complete analysis of the operations that the permitting agencies have determined are likely to meet permit issuance criteria: operations criteria described in CS5, with any modifications to CS5 the permitting agencies view as well-advised. In analyzing this operational scenario, the following are needed.

1. An analysis of the effect of CS5 water operations criteria on each covered species using approaches the permitting agencies agree represent the current best available science. The analysis of CS5 should be separate and clearly distinguishable from any other analyses presented in the Effects Analysis chapter.
2. CALSIM, biological modeling, and other analyses of the CS5 operations scenario that
  - shows whether CS5 operations criteria and restoration plan elements, as a complete package, are jointly likely to meet permit issuance criteria based on current best available science;
  - shows that CS5 operations, when analyzed as a complete package, are physically possible and within the authority of the Projects and other potential authorized entities.
3. An effects analysis results section based on #1 and #2 above that clearly describes the specific levels of take and specific habitat conditions that will result from implementing the CS5 operational criteria and may include analyses based on #1 and #2 above of other combinations of operational criteria and conservation measures.

By developing an effects analysis that describes the specific levels of take and specific habitat conditions that will result from implementing the operational criteria described in CS5, we will define a level of effects that is expected to contribute to the recovery of covered species. From there, the decision tree process can be used to test whether a change in operations can be substituted for the initially permitted operations. In order for this to happen, any proposed changes based on new science or other information on the changing ecosystem must be determined to result in equal effects or a net improvement in the level of effects on all covered species. Once this is achieved, a change to the

7/11/2012 7:13 PM

operations can be implemented without a change to the permit because the permitted level of take and effects on habitat will not be exceeded.

As a relevant side-note: while the decision tree process is based on an expectation that the new information that is developed will support a decision to implement initial operations in the range 4.5 to 5.5 MAF, the decision tree scientific planning will need to recognize that initial operations criteria more restrictive than CS5 may result from the decision tree investigations. This is necessary due to the very real possibility that new science or a changing ecosystem may reveal that more restrictive initial dual-conveyance operations measures than those currently contemplated will be necessary to contribute to the recovery of covered species.